



AMENDMENT UNDER 37 C.F.R. § 1.312(a)

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Patent Title: METHODS AND APPARATUS FOR TREATING FIBRILLATION AND CREATING DEFIBRILLATION WAVEFORMS

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Dkt: 1080.311US2

### IN THE CLAIMS

Please amend the claims as follows:

- C 1
1. (Previously Presented) A defibrillator comprising:  
a biphasic voltage waveform generator circuit, the circuit generating a waveform that includes:  
a positive voltage phase beginning at about zero volts and having an initial positive voltage magnitude greater than zero volts, the positive voltage phase having a first positively sloped portion extending from the initial positive voltage magnitude to a maximum positive voltage magnitude greater than the initial positive voltage magnitude; and  
a negative voltage phase having an initial maximum negative voltage magnitude less than zero volts extending from the maximum positive voltage magnitude of the positive voltage phase, the negative voltage phase having a second positively sloped portion extending from the initial maximum negative voltage magnitude to a terminal negative voltage magnitude less than the initial maximum negative voltage magnitude.
  2. (Previously Presented) The defibrillator, as set forth in claim 1, wherein the initial positive voltage magnitude is in a range from about 0 volts to about 50 volts.
  3. (Previously Presented) The defibrillator, as set forth in claim 1, wherein the maximum positive voltage magnitude is in a range from about 200 volts to about 400 volts.
  4. (Previously Presented) The defibrillator, as set forth in claim 1, wherein the initial maximum negative voltage magnitude is in a range from about -200 volts to about -400 volts.
  5. (Previously Presented) The defibrillator, as set forth in claim 1, wherein the terminal negative voltage magnitude is in a range from about -50 volts to about 0 volts.

6. (Previously Presented) The defibrillator, as set forth in claim 1, wherein the first positively sloped portion comprises a substantially linear slope.

7. (Currently Amended) The ~~waveform~~ defibrillator, as set forth in claim 1, wherein the first positively sloped portion comprises a continuously increasing slope.

8. (Currently Amended) The ~~waveform~~ defibrillator, as set forth in claim 1, wherein the first positively sloped portion comprises a continuously decreasing slope.

9. (Previously Presented) The defibrillator, as set forth in claim 1, wherein the second positively sloped portion comprises a substantially linear slope.

10. (Currently Amended) The ~~waveform~~ defibrillator, as set forth in claim 1, wherein the second positively sloped portion comprises a continuously increasing slope.

11. (Currently Amended) The ~~waveform~~ defibrillator, as set forth in claim 1, wherein the second positively sloped portion comprises a continuously decreasing slope.

12-42. (Canceled)

12  
43. (Previously Presented) A defibrillator comprising:

a biphasic voltage waveform generator circuit, the circuit generating a waveform that includes:

a positive voltage phase having an initial positive voltage having a magnitude greater than or equal to zero volts and having a first sloped portion extending from the initial positive voltage to a terminal positive voltage having magnitude greater than or equal to zero volts, the positive phase waveform shape independently selectable from a first set of waveform shapes; and

a negative voltage phase having an initial negative voltage having a magnitude less than or equal to zero volts extending from the terminal positive voltage of the

positive voltage phase, the negative voltage phase having a second sloped portion extending from the initial negative voltage to a terminal negative voltage having a magnitude less than or equal to zero volts, the negative waveform shape independently selectable from a second set of waveform shapes.

<sup>13</sup>  
~~44~~. (Previously Presented) The defibrillator, as set forth in claim <sup>12</sup>~~43~~, wherein the initial positive voltage magnitude is in a range from about 0 volts to about 400 volts.

C <sup>14</sup>  
~~45~~. (Previously Presented) The defibrillator, as set forth in claim <sup>12</sup>~~43~~, wherein the terminal positive voltage magnitude is in a range from about 0 volts to about 400 volts.

<sup>15</sup>  
~~46~~. (Previously Presented) The defibrillator, as set forth in claim <sup>12</sup>~~43~~, wherein the initial negative voltage magnitude is in a range from about 0 volts to about -400 volts.

<sup>16</sup>  
~~47~~. (Previously Presented) The defibrillator, as set forth in claim <sup>12</sup>~~43~~, wherein the terminal negative voltage magnitude is in a range from about 0 volts to about -400 volts.

<sup>17</sup>  
~~48~~. (Previously Presented) The defibrillator, as set forth in claim <sup>12</sup>~~43~~, wherein the first sloped portion comprises a positive slope.

<sup>18</sup>  
~~49~~. (Previously Presented) The defibrillator, as set forth in claim <sup>17</sup>~~48~~, wherein the first sloped portion comprises a substantially linear slope.

<sup>19</sup>  
~~50~~. (Currently Amended) The ~~waveform~~ defibrillator, as set forth in claim <sup>17</sup>~~48~~, wherein the first sloped portion comprises a continuously increasing slope.

<sup>20</sup>  
~~51~~. (Currently Amended) The ~~waveform~~ defibrillator, as set forth in claim <sup>17</sup>~~48~~, wherein the first sloped portion comprises a continuously decreasing slope.

<sup>21</sup>  
~~52~~. (Currently Amended) The waveform defibrillator, as set forth in claim ~~43~~<sup>12</sup>, wherein the first sloped portion comprises a negative slope.

<sup>22</sup>  
~~53~~. (Currently Amended) The waveform defibrillator, as set forth in claim ~~52~~<sup>21</sup>, wherein the first sloped portion comprises a substantially linear slope.

<sup>23</sup>  
~~54~~. (Currently Amended) The waveform defibrillator, as set forth in claim ~~52~~<sup>21</sup>, wherein the first sloped portion comprises a continuously increasing slope.

<sup>24</sup>  
~~55~~. (Currently Amended) The waveform defibrillator, as set forth in claim ~~52~~<sup>21</sup>, wherein the first sloped portion comprises a continuously decreasing slope.

<sup>25</sup>  
~~56~~. (Previously Presented) The defibrillator, as set forth in claim ~~43~~<sup>12</sup>, wherein the second sloped portion comprises a positive slope.

<sup>26</sup>  
~~57~~. (Previously Presented) The defibrillator, as set forth in claim ~~56~~<sup>25</sup>, wherein the second sloped portion comprises a substantially linear slope.

<sup>27</sup>  
~~58~~. (Currently Amended) The waveform defibrillator, as set forth in claim ~~56~~<sup>25</sup>, wherein the second positively sloped portion comprises a continuously increasing slope.

<sup>28</sup>  
~~59~~. (Currently Amended) The waveform defibrillator, as set forth in claim ~~56~~<sup>25</sup>, wherein the second positively sloped portion comprises a continuously decreasing slope.

<sup>29</sup>  
~~60~~. (Currently Amended) The waveform defibrillator, as set forth in claim ~~43~~<sup>12</sup>, wherein the second sloped portion comprises a negative slope.

<sup>30</sup>  
~~61~~. (Currently Amended) The waveform defibrillator, as set forth in claim ~~60~~<sup>29</sup>, wherein the second sloped portion comprises a substantially linear slope.

31 29  
~~62~~. (Currently Amended) The ~~waveform~~ defibrillator, as set forth in claim ~~60~~, wherein the second positively sloped portion comprises a continuously increasing slope.

32 29  
~~63~~. (Currently Amended) The ~~waveform~~ defibrillator, as set forth in claim ~~60~~, wherein the second positively sloped portion comprises a continuously decreasing slope.

42  
~~64~~. (Previously Presented) A method of generating a biphasic defibrillation waveform comprising the acts of:

generating a positive voltage phase having an initial positive voltage having a magnitude greater than zero volts and having a first sloped portion extending from the initial positive voltage to a terminal positive voltage having magnitude greater than or equal to zero volts, the positive phase waveform shape independently selectable from a first set of waveform shapes; and generating a negative voltage phase having an initial negative voltage having a magnitude less than or equal to zero volts extending from the terminal positive voltage of the positive voltage phase, the negative voltage phase having a second sloped portion extending from the initial negative voltage to a terminal negative voltage having a magnitude less than or equal to zero volts, the negative phase waveform shape independently selectable from a second set of waveform shapes.

43 42  
~~65~~. (Original) The method, as set forth in claim ~~64~~, wherein the initial positive voltage magnitude is in a range from about 0 volts to about 400 volts.

44 42  
~~66~~. (Original) The method, as set forth in claim ~~64~~, wherein the terminal positive voltage magnitude is in a range from about 0 volts to about 400 volts.

45 42  
~~67~~. (Original) The method, as set forth in claim ~~64~~, wherein the initial negative voltage magnitude is in a range from about 0 volts to about -400 volts.

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68. (Original) The method, as set forth in claim 64, wherein the terminal negative voltage magnitude is in a range from about 0 volts to about -400 volts.

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69. (Original) The method, as set forth in claim 64, wherein the first sloped portion comprises a positive slope.

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70. (Original) The method, as set forth in claim 69, wherein the first sloped portion comprises a substantially linear slope.

49  
71. (Withdrawn) The method, as set forth in claim 69, wherein the first sloped portion comprises a continuously increasing slope.

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72. (Withdrawn) The method, as set forth in claim 69, wherein the first sloped portion comprises a continuously decreasing slope.

51  
73. (Withdrawn) The method, as set forth in claim 64, wherein the first sloped portion comprises a negative slope.

52  
74. (Withdrawn) The method, as set forth in claim 73, wherein the first sloped portion comprises a substantially linear slope.

53  
75. (Withdrawn) The method, as set forth in claim 73, wherein the first sloped portion comprises a continuously increasing slope.

54  
76. (Withdrawn) The method, as set forth in claim 73, wherein the first sloped portion comprises a continuously decreasing slope.

55  
77. (Original) The method, as set forth in claim 64, wherein the second sloped portion comprises a positive slope.

56  
~~78.~~ (Original) The method, as set forth in claim ~~77~~<sup>55</sup>, wherein the second sloped portion comprises a substantially linear slope.

57  
~~79.~~ (Withdrawn) The method, as set forth in claim ~~77~~<sup>55</sup>, wherein the second positively sloped portion comprises a continuously increasing slope.

58  
~~80.~~ (Withdrawn) The method, as set forth in claim ~~77~~<sup>55</sup>, wherein the second positively sloped portion comprises a continuously decreasing slope.

59  
~~81.~~ (Withdrawn) The method, as set forth in claim ~~64~~<sup>42</sup>, wherein the second sloped portion comprises a negative slope.

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~~82.~~ (Withdrawn) The method, as set forth in claim ~~81~~<sup>59</sup>, wherein the second sloped portion comprises a substantially linear slope.

61  
~~83.~~ (Withdrawn) The method, as set forth in claim ~~81~~<sup>59</sup>, wherein the second positively sloped portion comprises a continuously increasing slope.

62  
~~84.~~ (Withdrawn) The method, as set forth in claim ~~81~~<sup>59</sup>, wherein the second positively sloped portion comprises a continuously decreasing slope.

85-93. (Canceled)

39  
~~94.~~ (Previously Presented) The defibrillator, as set forth in claim ~~48~~<sup>17</sup>, wherein the first sloped portion comprises a continuously decreasing positive slope.

33  
~~95.~~ (Previously Presented) The defibrillator, as set forth in claim ~~43~~<sup>12</sup>, wherein the first sloped portion comprises a negative slope.

- 34  
96. (Previously Presented) The defibrillator, as set forth in claim <sup>12</sup>43, wherein the first sloped portion comprises a continuously increasing negative slope.
- 40  
97. (Previously Presented) The defibrillator, as set forth in claim <sup>25</sup>56, wherein the second sloped portion comprises a continuously increasing positive slope.
- C.1  
41  
98. (Previously Presented) The defibrillator, as set forth in claim <sup>25</sup>56, wherein the second sloped portion comprises a continuously decreasing positive slope.
- 35  
99. (Previously Presented) The defibrillator, as set forth in claim <sup>12</sup>43, wherein the second sloped portion comprises a negative slope.
- 36  
100. (Previously Presented) The defibrillator, as set forth in claim <sup>35</sup>99, wherein the second sloped portion comprises a substantially linear negative slope.
- 37  
101. (Previously Presented) The defibrillator, as set forth in claim <sup>35</sup>99, wherein the second sloped portion comprises a continuously increasing negative slope.
- 38  
102. (Previously Presented) The defibrillator, as set forth in claim <sup>12</sup>43, wherein the waveform includes an interphase delay between the positive voltage phase and the negative voltage phase.
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